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DEPARTMENT OF NOTES AND REVIEWS

It is the purpose, in this department, to present from time to time brief original notes, both of methods of work and of results, by members of the Society. All members are invited to submit such items. In addition to these there will be given a few brief abstracts of recent work of more general interest to students and teachers. There will be no attempt to make these abstracts exhaustive. They will illustrate progress without attempting to define it, and will thus give to the teacher current illustrations, and to the isolated student suggestions of suitable fields of investigation.—[Editor.]

GENETICS IN RELATION TO AGRICULTURE

Under this title Professors Babcock and Clausen have brought together in a most valuable way two winning groups of interests. The development of agriculture as an application of various underlying sciences has been one of the very creditable outcomes of scientific progress. And the growth of the educational aspects of agriculture has been the wonder of modern education, which with the aid of shrewdly used political appeals has made more than one of our universities the tail to an agricultural kite. On the other hand, none of the divisions of biological science approaches that of genetics in the impetus which it has given in recent years to research. This is true whether we are thinking primarily of the discovery of new facts or of the theoretical conclusions to be had from them. If therefore we acquiesce, as we probably must, in the authors' statement that no field of science contributes more of economic worth than genetics does to the complex called agriculture, we have a measure of the possibilities of a book on this subject. In the opinion of the reviewer the book is peculiarly valuable, not merely to agricultural students for whom it is primarily written, but for teachers and students of biology everywhere, for the general reader, and for the breeder. A very rich selection of illustrative material has been made—much of it from sources not familiar to the general student.

The subject is treated under three heads: Fundamentals; Plant Breeding; Animal Breeding.

Part 1, dealing with the Fundamentals of genetics comprises fourteen chapters. Biologists will agree, I believe, that the various hypotheses have been fairly stated and the pros and cons of the more uncertain questions justly given. The illustrative material is pertinent and modern.

Part 2 discusses Plant Breeding in twelve chapters and contains such representative chapters as, Historical Introduction, Varieties in Plants, Composition of Plant Populations, Selection, Utilization of Hybrids, Mutations, Graft Hybrids and other Chimeras, Breeding Plants for Disease Resistance, Methods of Plant Breeding.

Part 3, Animal Breeding includes thirteen chapters. These run parallel to those of part 2, with some of peculiar interest added—as for example, Disease and Related Phenomena in Animal Breeding, Sex Determination in Animals, Fertility in Animals, and Some Beliefs of Practical Breeders. The latter deals briefly with the scientific grounds for disbelief in telegony, maternal impression, prepotency, and the like.

The concluding chapter states the grounds for a becoming modesty in relation both to the quantity and the precision of our present knowledge of animal genetics.

The book contains also a glossary, a list of the literature cited, and an adequate index. It is richly illustrated with pictures, diagrams, and tables. It is an attractively made book, and is sure to prove a useful and satisfying one.

GENETICS IN RELATION TO AGRICULTURE, by E. B. Babcock and R. E. Clausen. Pp. xx+675, fully illustrated. The McGraw-Hill Book Company, New York, 1918.

NITRATE CELLULOSE AS A SUBSTITUTE FOR CELLOIDIN

As a result of the war the importation of celloidin has been interrupted and the microscopist has been compelled to look about for workable, substitutes. Parlodion has been found to be very satisfactory, and can be obtained from the Arthur H. Thomas Company, Philadelphia. In this laboratory, however, we have had such excellent results with nitrate cellulose (soluble cotton) that I feel justified in calling it to the attention of other workers. Although never in very general use, soluble cotton as an embedding medium has been known for some time, and has been used for a number of years in the laboratory of Dr. Adolf Meyer, John Hopkins Hospital, as a routine method of embedding. It has two valuable features—the cost is less than any of the other practical celloidin substitutes, and its preparation is comparatively simple.

Nitrate cellulose is shipped in strong alcohol, and upon reaching the laboratory is put through the following process: It is washed first in several changes of 95% alcohol and squeezed nearly dry; then in two changes of absolute alcohol, after which it is dissolved in equal parts of absolute alcohol and ether, filtered through absorbent gauze into a flat